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EXAMINER
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ART UNIT	PAPER NUMBER
2613	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	09/462,337	ZEFFLER ET AL.	
	Examiner	Art Unit	
	David S. Kim	2613	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *15 June 2007*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *14-23,27 and 28* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *14-23,27 and 28* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

3. **Claim 14-17** are rejected under 35 U.S.C. 103(a) as being unpatentable over Siperko ("LaserNet – A fiber optic intrastate network (planning and engineering considerations)") in view of Widmer et al. (U.S. Patent No. 4,151,373, hereinafter "Widmer").

Regarding claim 14, Siperko discloses:

A method for a wavelength-division multiplex (p. 38, Table V) network that performs an optical, fiber-bound information transfer in a digitized form, comprising the steps of:

using a terminal (e.g., Fig. 8 or 9) to process useful information according to one of an optical encoding and an optical decoding (e.g., return-to-zero code (RZ) in Table X on p. 43);

performing one of:

feeding (e.g., Fig. 8 or 9) at a network terminator the useful information into the wavelength-division multiplex network as an optical signal having a defined fundamental wavelength (e.g., 1550 nm on p. 42, col. 1 or 1310 nm in Table X on p. 43), and

removing (e.g., Fig. 8 or 9) at the network terminator the useful information from the wavelength-division multiplex network as the optical signal having the defined fundamental wavelength (e.g., 1550 nm on p. 42, col. 1 or 1310 nm in Table X on p. 43);

transmitting collectively a plurality of signals having different wavelengths in an optical fiber (p. 38, Table V);

Siperko does not expressly disclose:

performing one of a generation and an analysis of the *signaling and control information* in one of the network terminator and in a further network element;

performing one of:

feeding the *signaling and control information* into the wavelength-division multiplex network, and

removing the *signaling and control information* from the wavelength-division multiplex network;

using a *time-division multiplex operation to transmit the signaling and control information* with the defined fundamental wavelength via the *same components* of the wavelength-division multiplex network as the corresponding useful information, wherein the *signaling and control information is capable of being modulated independently of the useful information.*

In other words, Siperko does not expressly provide teachings regarding the ***signaling and control information*** limitations of claim 14.

However, adding signaling and control information to communication networks as part of a method for performing optical, fiber-bound information transfer in a digitized form is an extremely well-known technique in the field of communications. Widmer provides an exemplary method for doing so:

A method for transmitting signaling and control information (Widmer, col. 1, lines 12-24) for a network that performs an information transfer in a digitized form, comprising the steps of:

performing one of a generation (Widmer, col. 7, lines 6-10) and an analysis (Widmer, col. 1, lines 15-20) of the signaling and control information in one of a network terminator and in a further network element (Widmer, another network terminator, not shown);

performing one of the steps of:

feeding (Widmer, col. 3, lines 18-21) the signaling and control information into the network, and

removing (Widmer, col. 3, lines 42-44) the signaling and control information from the network;

using a time-division multiplex operation (Widmer, Figs. 1-3a) to transmit the signaling and control information via the same components (Widmer, Fig. 4) of the network as those used to transmit the useful information, wherein the signaling and control information is capable of being modulated independently (Widmer, col. 1, lines 12-15; note separate "data source" and "extra information source" in Fig. 4) of the useful information.

At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to implement the signaling and control information transmitting method of Widmer in the method of Siperko. One of ordinary skill in the art would have been motivated to do this since the method of Widmer shows a way to provide extra information that may be necessary in the method of Siperko. More exactly, notice that Siperko's method employs a PCM network (p. 38, Table V) for the transmission of voice channels. Widmer's method is also applicable to PCM networks (col. 1, l. 9-11, 24) for the transmission of voice channels. Widmer's method teaches a way to provide extra information that is necessary for important transmission functions in PCM networks, such as synchronization (col. 1, l. 9-24), which may be necessary in the method of Siperko.

Regarding claim 15, Siperko in view of Widmer discloses:

The method according to claim 14, wherein the signaling and control information includes a characteristic signal sequence (Widmer, col. 6, lines 50-55; col. 9, lines 1-6) by which the signaling and control information is capable of being identified in a signal stream of the useful information such that corresponding transmitters and receivers of the signaling and control information are synchronized.

Regarding claim 16, Siperko in view of Widmer discloses:

The method according to claim 14, further comprising the step of:

Transmitting the signaling and control information at regular time intervals T (Widmer, Fig. 3a, col. 4, lines 34-49) for a predetermined duration of T_{OH} (Widmer, m bits in Fig. 3a).

Regarding claim 17, Siperko in view of Widmer discloses:

The method according to claim 16, wherein each regular time interval T is a multiple of a characteristic clock pulse duration of the useful information (Widmer, col. 9, lines 44-57).

4. **Claims 18 and 28** are rejected under 35 U.S.C. 103(a) as being unpatentable over Siperko in view of Widmer as applied to the claims above, and further in view of Bingham et al. (U.S. Patent No. 5,644,573, hereinafter "Bingham") and Glisic et al. ("Efficiency of Digital Synchronous Communication Systems", hereinafter "Glisic").

Regarding claim 18, Siperko in view of Widmer discloses:

The method according to claim 16, wherein:

a synchronization between a transmitter and a receiver of the signaling and control information is accomplished by a characteristic signal being transmitted at brief intervals (Widmer, col. 6, lines 50-55; col. 9, lines 1-6).

Siperko in view of Widmer does not expressly disclose:

following the synchronization, the characteristic signal being transmitted at variable duration time intervals that gradually increase up to a duration of the regular time intervals T.

However, notice that the transmission of a characteristic signal at ***variable duration time intervals*** is known in the art, as disclosed by Bingham (col. 15, l. 15-43). At the time the

invention was made, it would have been obvious to one of ordinary skill in the art to employ such transmission of the characteristic signal of the prior art of record at variable duration time intervals. One of ordinary skill in the art would have been motivated to do this since such variability allows one to employ the characteristic signal with the flexibility to "adjust for changing circumstances" (Bingham, col. 15, l. 37) "in accordance with the needs of any particular system" (col. 15, l. 22-23).

Additionally, ***increasing*** such a variable duration time interval of a periodic transmission of a characteristic signal is obvious. That is, consider the transmission efficiency discussed in Glisic (p. 680, 1st full paragraph, "ratio of the information to the transmission bit rate"). An increased variable duration time interval corresponds to less frequent transmissions of the characteristic signal, which corresponds to more available time for transmissions of data, which corresponds to a higher ratio of information to transmission bit rate, or higher transmission efficiency. At the time the invention was made, it would have been obvious to one of ordinary skill in the art to increase the variable duration time interval of the periodic transmission of the characteristic signal of the prior art of record. One of ordinary skill in the art would have been motivated to do this since doing so could result in higher transmission efficiency, as discussed above.

Moreover, performing this increasing step ***gradually*** is obvious. That is, in comparison to other types of transitions, gradual transitions are generally known to provide the benefit of smoother transitions from one state to another state. In contrast, abrupt transitions could lead to a higher probability of disruptions in synchronization.

Furthermore, this obviousness argument notes that this limitation regarding the synchronization does not appear to constitute the thrust of any particular inventive effort by the Applicant. That is, the specification appears to discuss this limitation without any particular recognition of inventive effort (Applicant's specification, p. 5, l. 24-27).

Regarding claim 28, claim 28 is a method claim that corresponds to a coherent combination of the limitations in method claims 14 and 16-18. Since all these claims are rejected under Siperko in view of Widmer, Bingham, and Glisic, all the limitations of method claim 28 are

addressed by the teachings of these references, including considerations of obvious variations of these teachings. Additionally, Siperko in view of Widmer, Bingham, and Glisic coherently teaches the limitations in claims 14 and 16-18. That is, the limitations in claims 14 and 16-18 are not divergently taught under Siperko in view of Widmer, Bingham, and Glisic. Therefore, the recited steps in the coherent combination of the limitations in claims 14 and 16-18 read on the corresponding steps in method claim 28.

5. **Claims 19-23** are rejected under 35 U.S.C. 103(a) as being unpatentable over Siperko in view of Widmer as applied to claim 16 above, and further in view of Bingham.

Regarding claim 19, Siperko in view of Widmer discloses all the limitations of claim 19 except for the time interval δ. Bingham discloses such a time interval (Bingham, time intervals S1, S2, and S3 in Fig. 3). At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to incorporate the time interval of Bingham in the signal and control information transmission of Widmer. One of ordinary skill in the art would have been motivated to do this to provide the benefits of "a variety of control type functions such as synchronization of new remote units, transmission channel quality checking and handling data transfer requests" (Bingham, abstract).

Regarding claim 20, Siperko in view of Widmer, further in view of Bingham discloses:

The method according to claim 19, further comprising the steps of:

during the interruption lasting for the duration of $T_{OH} + 2\delta$ resulting from the transmission of the signaling and control information, buffering (Widmer, Fig. 3b, col. 4, lines 50-54) the useful information in a transmitting terminal equipment (Widmer, Fig 4); and

during an intervening interval with a duration of $T - (T_{OH} + 2\delta)$, transmitting the useful information at such an increased bit rate that an average bit rate corresponds to an uninterrupted useful information transfer (Widmer, col. 2, lines 29-52).

Regarding claim 21, Siperko in view of Widmer, further in view of Bingham discloses:

The method according to claim 20, wherein the transmitting terminal equipment includes shift registers (Widmer, col. 7, lines 22-29).

Regarding claim 22, Siperko in view of Widmer, further in view of Bingham discloses:

The method according to claim 20, further comprising the steps of:

causing the transmitting terminal equipment to reserve time gaps of the duration T_{OH} + 2δ in the useful information; and

causing the transmitting terminal equipment to signal a temporal position (Widmer, col. 4, lines 60-62) of the reserved time gaps via the network terminator to a network element (Widmer, col. 4, lines 61-62) transmitting the signaling and control information.

Regarding claim 23, Siperko in view of Widmer, further in view of Bingham discloses:

The method according to claim 20, further comprising the steps of:

causing the network terminator to inform the transmitting terminal equipment of when (Widmer, col. 4, line 56 – col. 7, line 39) a time gap having the duration of T_{OH} + 2δ in the useful information is to be reserved for the transmission of the signaling and control information; and

causing the network terminator to inform the transmitting terminal equipment of when (Widmer, col. 6, lines 39-49) the useful information is to be buffered.

6. **Claim 27** is rejected under 35 U.S.C. 103(a) as being unpatentable over Siperko in view of Widmer, further in view of Bingham, as applied to claim 20 above, and further in view of Choquet (U.S. Patent No. 4,330,858).

Siperko in view of Widmer, further in view of Bingham, discloses:

causing the network terminator to communicate (Widmer, col. 4, lines 60-62) the signaling and control information to the transmitting terminal;

causing the transmitting terminal to optically encode (Siperko, e.g., return-to-zero code (RZ) in Table X on p. 43) the signaling and control information and transmit the signaling and control information via the wavelength-division multiplex network; and

causing a receiving terminal provided with the encoded useful information to:

decode (Siperko, e.g., return-to-zero code (RZ) in Table X on p. 43) the signaling and control information, and

filter out (Widmer, col. 3, lines 42-44) the signaling and control information from the useful information.

Siperko in view of Widmer, further in view of Bingham, does not expressly disclose:

causing a receiving terminal provided with the encoded useful information to

communicate the signaling and control information to an upstream receiver-end network terminator.

Choquet teaches causing such a receiving terminal (Choquet, Fig. 5) to communicate signaling and control information to supervisory equipment (Choquet, col. 2, lines 25-33). At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to incorporate the teaching of Choquet by communicating the signaling and control information to an upstream receiver-end network terminator in the method of Siperko in view of Widmer, further in view of Bingham. One of ordinary skill in the art would have been motivated to do this so since "it has been found costly and otherwise undesirable to provide special modems or special separate communication channels for handling supervisory messages. It is preferable that supervisory messages be communicated by facilities which are no more expensive and require no greater frequency bandwidth than the facilities that otherwise would be needed to handle normal message traffic in the complete absence of any supervisory messages" (Choquet, col. 1, lines 27-35). The supervisory messages of Choquet correspond to the signaling and control information of Siperko in view of Widmer, further in view of Bingham. The final end receiver of the useful information signal would have no use for signaling and control information related to the network; conversely, other components, such as network terminators, depend on such signaling and control information for proper operation.

Response to Arguments

7. Applicant's arguments filed on 15 June 2007 have been fully considered but they are not persuasive. Applicant presents two salient points. Applicant's arguments assert that (1) neither Siperko nor Widmer nor the combination thereof teaches the invention of Applicant's claim 14 (REMARKS, p. 6, beginning of last paragraph) and that (2) Siperko is not properly combinable with Widmer since there is no proper motivation shown to combine features of the two references in either reference (REMARKS, p. 7, end of 1st paragraph).

Regarding (1), Examiner respectfully notes that the standing rejection already recognizes that neither Siperko nor Widmer *alone* teaches the invention of Applicant's claim 14. Accordingly, the standing rejection presented an obviousness argument that relies on the combination of Siperko and Widmer. Notice that Applicant's arguments do not address the merits of the combined teachings of Siperko in view of Widmer, as presented in the standing Final Rejection (mailed on 07 July 2006). Accordingly, Applicant's assertion that neither Siperko nor Widmer teach the invention of Applicant's claim 14 is not persuasive.

Additionally, Applicant's assertion that the *combination* of the teachings of Siperko and Widmer does not teach the invention Applicant's claim 14 is not persuasive. Applicant states,

> "Applicants maintain that neither the Siperko reference nor the Widmer reference (and thus, even when viewing both the Siperko and Widmer references together they still lack features) teach or describe at least the features of *performing a generation or an analysis of the signaling and control information in one of the network terminator and in a further network element; performing one of the steps of feeding the signaling and control information into the wavelength-division multiplex network, and removing the signaling and control information from the wavelength-division multiplex network; and using a time- division multiplex operation to transmit the signaling and control information with the defined fundamental wavelength via the same components of the wavelength-division multiplex network as the corresponding useful information, wherein the signaling and control information is capable of being modulated independently of the useful information,* as in claim 14" (REMARKS, p. 6-7, bridging paragraph, emphasis Examiner's).

The italicized portion above is the *same* as the subject matter identified in the treatment of claim 14 above in the standing rejection. In other words, the standing rejection *already* recognizes that Siperko does not expressly teach these limitations. Then, the standing rejection applies the teachings of Widmer to address these limitations. To state that the combination does not teach the invention of claim 14 is a simple assertion that lacks sufficient rationale and technical merit to be persuasive. In view of the combination, which limitations would be missing? The standing rejection states that all the limitations are addressed in view of the combination. Applicant asserts that all the limitations are not addressed in view of the combination. Without further explanation or clarification of exactly how the combination does not address the contested limitations, Applicant's point constitutes a mere assertion, which is not persuasive. As Applicant does not directly address or combat the merits of the standing rejection, Applicant's assertion is not persuasive.

Regarding (2), Examiner also respectfully notes that a proper motivation was presented in the standing rejection:

> "Widmer's method teaches a way to provide extra information that is necessary for important transmission functions in PCM networks, such as synchronization ([Widmer,] col. 1, l. 9-24), which may be necessary in the method of Siperko [, which employs a PCM network (Siperko, p. 38, Table V)]" (mailed on 07 July 2006, p. 4, last full paragraph).

Notice that Applicant's arguments do not address the merits of this motivation. Accordingly, Applicant's assertion that there is no proper motivation shown to combine features of the two references is not persuasive.

Summarily, Applicant's arguments are not persuasive. Accordingly, Examiner respectfully maintains the standing rejections.

Conclusion

8. The reference made of record and not relied upon is considered pertinent to applicant's disclosure. Tzannes et al. (U.S. Patent No. 6,522,666 B1) is cited to show a variable overhead rate (col. 1, l. 15-18).

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to David S. Kim whose telephone number is 571-272-3033. The examiner can normally be reached on Mon.-Fri. 9 AM to 5 PM (EST).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kenneth N. Vanderpuye can be reached on 571-272-3078. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

DSK

KENNETH VANDERPUYE
SUPERVISORY PATENT EXAMINER